

CLAIMS

1. A method of securing a cover over a device supported by a substrate, the method comprising:
 - forming a cover bond ring on the cover;
 - adding an intermediate tacking layer on top of the bond ring;
 - tacking a mating substrate bond ring to the tacking layer; and
 - staking the cover after tacking the mating substrate bond ring on the substrate to the tacking layer.
2. The method of claim 1 wherein the cover bond ring is inorganic.
3. The method of claim 2 wherein the cover bond ring comprises a high melting point solder.
4. The method of claim 2 wherein the cover bond ring comprises AuSn.
5. The method of claim 2 wherein the cover bond ring comprises Au.
6. The method of claim 1 wherein the intermediate layer comprises a low melting point material.
7. The method of claim 6 wherein the intermediate layer comprises In.
8. The method of claim 1 wherein tacking the cover is performed at low temperature and low pressure.
9. The method of claim 1 wherein staking the cover comprises reflowing the bond rings to form a permanent bond with the substrate.
10. The method of claim 1 wherein the cover is glass.
11. The method of claim 1 wherein tacking is performed at a temperature at or above a point where the tacking layer becomes tacky.

12. The method of claim 1 and further comprising forming an antioxidation layer over the intermediate layer.

13. The method of claim 12 wherein the antioxidation layer comprises a thin layer of noble metal.

14. The method of claim 1 wherein the device comprises a microelectromechanical device.

15. A method of securing a cover over a device supported by a substrate, the method comprising:

- forming a bond ring on the cover;
- adding an intermediate tacking layer on top of the bond ring;
- tacking the substrate to the tacking layer; and
- staking the cover after tacking the substrate.

16. A method of securing a glass cover over a device supported by a substrate, the method comprising:

- forming a bond ring on the substrate surrounding the device;
- forming a mating bond ring on the cover;
- adding an intermediate In tacking layer on top of the bond ring;
- covering the intermediate tacking layer with a noble metal;
- tacking the bond ring on the substrate to the tacking layer; and
- staking the cover by reflowing the bond ring to form a permanent bond with the substrate.

17. An article of manufacture comprising:

- a device supported by a substrate;
- a cover;
- a bond ring formed on the cover, wherein the bond ring has a high melting point, and further having absorbed material with a lower melting point, wherein the cover and bond ring form a staked cover for the device.

18. The article of manufacture of claim 17, wherein the device comprises a microelectromechanical device.
19. The article of manufacture of claim 17 wherein the bond ring comprises AuSn.
20. The article of manufacture of claim 17 wherein the bond ring comprises a trace amount of In.
21. The article of manufacture of claim 17 wherein the bond ring comprises AuGe.
22. The article of manufacture of claim 17 wherein the bond ring comprises a Sn containing solder.
23. The article of manufacture of claim 17 wherein the cover comprises a window.
24. An article of manufacture comprising:
 - a cover for covering a microelectromechanical device;
 - a bond ring of inorganic material formed on the cover;
 - a tacking layer formed on top of the bond ring; and
 - an antioxidant layer formed on top of the tacking layer.
25. The article of manufacture of claim 24 wherein the tacking layer comprises In.
26. The article of manufacture of claim 24 wherein the antioxidant layer comprises a noble metal.
27. The article of manufacture of claim 26 wherein the antioxidant layer comprises Au.

28. The article of manufacture of claim 24 wherein the bond ring comprises AuSn.

29. The article of manufacture of claim 24 wherein the bond ring comprises AuGe.

30. The article of manufacture of claim 24 wherein the bond ring comprises a Sn containing solder.

31. The article of manufacture of claim 24 wherein the cover comprises a glass window.

32. A method of securing a cover over a device supported by a substrate, the method comprising:

- forming a cover bond ring on the cover;
- forming a mating substrate bond ring surrounding the device;
- adding an intermediate tacking layer on top of on of the bond rings;
- tacking the bond rings in a mated position; and
- staking the cover after tacking the bond rings.

33. A method of securing a cover for a microelectromechanical device, the method comprising:

- forming a bonding ring having a high melting point;
- forming an intermediate layer on the bonding ring with a lower melting point;
- tacking the intermediate layer over the microelectromechanical device at a low temperature and at low pressure; and
- staking the cover over the microelectromechanical device at a higher temperature following the tacking at a higher temperature.

34. The method of claim 33 and further comprising forming a thin noble metal layer intermediate layer to prevent oxidation.

35. An article of manufacture comprising:
- means for covering a microelectromechanical device;
 - a bond ring of inorganic material supported by the means for covering;
 - means for tacking the bond ring; and
 - means for preventing oxidation.